REMARKS/ARGUMENTS

In response to the above-referenced Office Action, Applicant respectfully requests the Examiner to consider for patentability all of the remaining claims in light of the amendments that have been made to Claims 1-5, 10, 13, and 17-20, and the arguments set forth below.

Rejections Under 35 U.S.C. § 103(a)

In this office action, claims 1-3, 5, 7-8 and 12-18 were rejected under 35 U.S.C. § 103(a) as being anticipated by Brunner et al. U.S. Patent 6,301,470. The applicant amends claim 1 and traverses the rejection as follows:

Brunner et al. reveals a radio communication method of recovering data from radio signals, which comprises:

Radio signals from antenna arrays scaled with a corresponding coefficient to perform spatial filtering (Fig. 2); then the scale version of the radio signal is fed into a wave front detector 11 which estimates the channel input response associated with each of the wave fronts and determines a relative strength of each of the wave fronts (column 5, 29-32). In accordance with the determined strength of the wave fronts, the spatio-temporal filter 8 determines whether data may be recovered from a particular set of wave fronts associated with the same transmitted radio signals. The channel input response is shown in Fig. 3 as an example.

In detail, there are differences between the claimed invention and the reference document, as further described herein:

1) The concept of channel input response is different.

In the reference document (Brunner), the wave front refers to a component of a radio signal which arrives at an antenna array at a particular angle having reached the antenna array via one of a number of distinct propagation paths (column 2, lines 3 to 6). As shown in Fig 3, wave front y_3 corresponds to MS2 alone, and wave front y_1 and y_2 correspond to MS1, i.e., each of the radio signal wave fronts y_M is associated with signal 1 transmitted by one of mobile stations MS1

and MS2 (column 5, lines 12 to 15). It seems that each wave front relates to each radio signal from each user. On the other hand, the channel input response refers to that associated with each of the wave fronts. Thus, the channel input response is associated with each radio signal from each user.

However, in the claimed invention, each transceiver link comprises k user channels which correspond to the number of users covered in a base station. Thus, the channel input responses refer to those associated with k user channels for each antenna unit. Thus, the total of channel input responses will be $k \times i$, where i denotes the number of the antenna unit.

2) How to determine whether data may be recovered is different and the subsequent processing after data is recovered is different.

Not only is there a difference in the concept of channel input response, but how to determine whether data may be recovered is also different. In the reference document (Brunner), if the signal strength of the radio signals generating wave fronts, namely the channel input response shown in Fig 3, is considerably greater than others, then data may be recovered, otherwise interference cancellation is needed.

However, in the claimed invention, the main path and multipath power distribution for each user channel of all antenna units within a searching window is calculated in order to determine each user maximum peak value power position, and then data at each user maximum peak value power position may be recovered, and reconstructed so as to be used for interference cancellation. Thus, the interference among a main path of users is able to be cancelled.

3) The antenna arrays are a conventional antenna system rather than a smart antenna.

Brunner et al. discusses utilization of adaptive beam forming techniques to exploit spatial diversity, but fails to teach or suggest how a smart antenna array or beam forming techniques is combined with the interference cancellation. Only a conventional antenna system in the embodiment of Brunner et al. is illustrated; thus a person skilled in art would difficulties implementing the claimed invention that combined smart antenna array techniques with the interference cancellation because radio signals processing in a smart antenna is very different in

substance.

In summary, the channel input response in Brunner et al. reference is not equivalent to those in the claimed invention, and the determined maximum peak value power position in the claimed invention is not equivalent to the position of the maximum signal strength in Brunner et al. reference. So Brunner et al. fails to disclose, teach, suggest or make obvious the claimed invention.

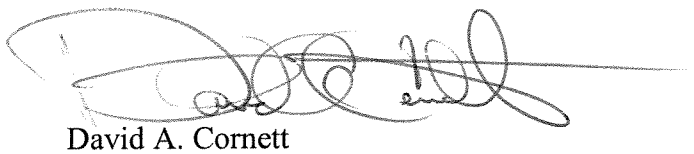
Conclusion

Applicants respectfully submit that Claim 1 is not obvious in view of Brunner et al. and is now in condition for allowance. As such, Applicants respectfully submit that dependent Claims 2-3, 5, 7-8, and 12-16 are also allowable. Similarly with respect to Claim 17, Applicants also submit that it is in condition for allowance. Accordingly, dependant Claims 18-20 are also in condition for allowance.

Applicants have amended Fig. 1 and Fig. 2, as shown and described. Applicants submit that these changes have not changed the scope of the invention or added new matter to the application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in the "PETITION AND FEE FOR EXTENSION OF TIME 37 C.F.R. § 1.136(a)" accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



David A. Cornett

Registration No. 48,417

Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Atlanta Office (404) 881-7000
Fax Atlanta Office (404) 881-7777

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